

# PROMOTING INQUIRY

## IN THE ELEMENTARY CLASSROOM



*The brain likes novelty. What does this look like in your classroom as glue to retention?*

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*“Tell me and I forget, teach me and I may remember, involve me and I learn.”*

~Ancient Proverb<sup>1</sup>

Several classes from Rogers Adventist School in College Place, Washington, had just returned from a field trip to McNary Dam in Umatilla, Oregon. Students gathered in the classroom to discuss what they had learned. A question was posed to the students: “How was learning today different from a day in the classroom?”

“We learn when we make little clay models or do experiments, but we learn more when we go there,” responded Ray,<sup>2</sup> a 4th-grade student. Ryan, also a 4th grader, thought for a moment then spoke; “We learn more from being there. It is like *Live Learning*.” Students agreed as they repeated the new words, “*Live Learning*,” which would become a key to how we study in our classroom. Two years later, the term has been handed down, and students refer to *Live Learning* as if it were a learning strategy they had always known.<sup>3</sup>

Just as primary sources are often the best, learning is optimal when students can visit the learning site. But teachers may face time and

money constraints. It is simply not possible to tour any and every part of the world that fits the current curricular topic in order to learn the history and geography of the area. *Live Learning* (learning from actually being there) is inquiry-based learning at its best; however, since this is not always possible, then the next best thing is for students to dig into the subject, exploring areas of interest and sharing their findings with their classmates. Inquiry-based learning provides such a learning experience.

With the wealth of information available on the Internet, and knowing that the knowledge base of many subjects is constantly changing and expanding, students in classrooms today need to know how to find knowledge and apply it. Inquiry-based learning helps to develop the skills needed to become a lifelong learner. When the learner is actively involved in the process, the activity has more meaning than when information is fed through textbooks and what the teacher has gleaned.

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BY AUDREY MAYDEN CAMPBELL and JOY BRUNT VEVERKA

## How Do I Begin?

### **Step 1: Choose a Question**

Inquiry-based learning begins with a question. Students choose a question they want to answer or a topic about which they wish to learn more. This step can take some time but helps to ensure student motivation regarding the project. Students start by perusing the topic to be studied, asking what they would like to know. At first, it may be necessary for the teacher to offer some suggestions. But as students become more comfortable with this type of study, they will begin to ask their own questions. As information is gathered, they either narrow or broaden their topic to a manageable scope and size. This can be done by using books, interviews, magazines, encyclopedias, videos, Websites, or even their textbooks. What kinds of questions lead to a good project? Questions cannot deal with a simple fact or something that is already known. Neither can they be something that can be answered by a quick Internet search. The questions must have an objective base for an answer. Finally, the questions can't be too personal. They should lead to deeper understanding and to conclusions worth sharing with others. Whenever students can share their research outside of the classroom, the authenticity makes the inquiry valuable and credible.

### **Step 2: Do the Research**

Once a topic is chosen, students search for resources to help them learn more about their topic. Books, magazines, encyclopedias, textbooks, and the Internet can be used for research. Students may also have access to an online research database such as EBSCOhost or CultureGrams [see sidebar on page 23]. Other research sources might include personal interviews. As students compile and cite their research, they may slightly alter or even change their questions. It is during this step that the students need to delve into a variety of sources.

### **Step 3: Interpret Information**

Students take notes and write down information that helps answer their questions or further their inquiry. This is when students learn to cite their sources and interpret information. As they locate information, they copy down the bibliographic information for each source they have used and take notes on the content. If students are using the Internet to find sources, they can open a Word

document and copy and paste their sources as they find them. In this step, students learn to look critically at the facts they find. Is the information from a reliable source? Is it from a primary or secondary source? Is the information broad enough and deep enough to lead to sound conclusions? Students can check source against source, comparing facts for validity.

### **Step 4: Report Findings**

When research is completed, students choose methods to share their findings. Reports—either written or verbal, PowerPoint presentations, Prezi (a Web-based presentation software), posters, displays, and brochures—



Students put the finishing touches on a PowerPoint presentation to share with classmates.

are some of the Web-based ways to share. Other students may choose to write skits or plays, create models, publish a book, or plan an event at an outside-of-school venue.

### Putting the Plan Into Action

I (Audrey) collaborated with a colleague (Joy) and her students on an inquiry-based project. The students were learning about the Southeastern states of the U.S. in their social studies class. We discussed how to begin this project and decided that we would conduct a brief overview of the states. When this was accomplished, students brainstormed other aspects or information that they wanted to know about this geographical area. Dur-

ing a brainstorming session, all ideas were placed on the board without discussion or judgment. Those ideas were projected onto the board so all students could read them. Soon it became apparent that the questions fell into six or eight categories, so after creating headings, we divided the statements into the categories selected. These categories included architecture, food, places of interest, weather/climate, industry, wildlife, and geographical features. Next, the students chose the category about which they wanted to learn more and were separated into groups of three or four.

The students were excited! We brought books on the different topics into the classroom for the students to use, and they also referred to the CultureGrams database (see sidebar on page 23) for research during



Students in Joy Veverka's classroom utilize a variety of materials to create answers to their inquiries.

their computer time. Some students also used their textbooks to find background information.

As they wrote down their information, we seized the teachable moments to talk about using one's own words and not copying someone else's words. Students learned that credit needs to be given to authors, that just changing a few words does not make writing their own.

A few of the students needed some guidance, but most involved themselves in the subject and appeared excited to be working on the project. Soon we began asking them how they would like to share their project information with the class. A group that was learning about wildlife in the ocean came up with the idea of developing sketches of

the leatherback turtle and manatee drawn to scale in order to show the size of each. Other students found video clips to share or worked on presentations. In the process of creating reports, students learned to copy and paste information on the computers.

Over a one-week period, students shared their work in a variety of ways: Some used PowerPoint, some made posters or models, some gave oral reports, and some illustrated their presentations with photos or videos, while others prepared food items to taste.

Following the presentations, the students participated in a discussion about the projects they had just completed. Students talked about how much they had learned and their enjoyment in working on the projects.



Joy Veverka's 3rd- and 4th-grade students engage in inquiry-based experiences that help them develop skills such as learning how to create research questions, gather evidence, interpret information, cite sources for both, and work collaboratively to present information.





Audrey Campbell and the 3rd- and 4th-grade students listen to a poster presentation. Students also used PowerPoint presentations, models, oral reports, video- and photo-illustrated works, and prepared food items to share their findings.

They felt that they had learned more than if the topic had been textbook-driven. All agreed that the learning experience had been fun, and they wanted to have more opportunities using an inquiry approach.

### Challenges to Implementing the Inquiry-based Approach

#### Topic Selection

Inquiry-based learning may seem a bit difficult at first for the teacher. Students may not choose the same areas of study that the teacher has in the past. Their questions and inquiries may take them to unusual topics. For example, students did not always select areas that I (Joy) felt were important. They skipped over one of my favorite places in the southeastern United States, Savannah, Georgia. However, they discovered other fascinating facts. One group, researching food, discovered the Barter Theatre in Abingdon, Virginia. Still in existence today, it began during the Depression when northeasterners, who were out of jobs and money, came to perform in exchange for food, something of which the cash-poor farmers in the area had plenty. Cooper Schroeder, a 3rd grader, even made a model of the Barter Theatre. As the project progressed, it became evident that they were studying in depth, covering required curriculum, but in their way rather than mine, a way that made it come alive for them.

#### Scheduling

Teachers may wonder when they will have time for inquiry-based learning and how they will fit it into their program. Granted, it takes increased teacher engagement during the time students are working with their project. Students will be working on a topic for a few weeks, and during that time, there will be no daily assignments to grade for that subject. Stages of a project are checked off along the way, and partial grades can be given. Rubrics are great tools that should be used throughout the process and can be used to help calculate the final grade for the finished project.

Inquiry-based learning is front-loaded in that the teacher is involved in gathering materials, establishing rubrics, and planning how to use the allocated time. Since students are researching, preparing, evaluating, and presenting, many aspects of the curriculum are covered at one time. Content areas such as science and social studies are investigated and researched using the tools taught in skills subjects such as technology and language arts. When subjects are combined, or integrated, time becomes less of an issue than it is when each subject has a specific time frame.

Some teachers may feel that this approach will take time away from addressing content standards, and may worry about how well students

will perform on standardized tests since specific subject matter might not have been covered in the inquiry-based learning projects. It is important to note here that standards serve as a guide and represent a recommended level of understanding. Inquiry-based learning requires that teachers plan ahead to ensure that students' reading, writing, and thinking skills will be strengthened in the process. As a result, students participating in inquiry-based learning will engage with content beyond what is required, and in many cases do much better on standardized tests.<sup>4</sup>

### Student Engagement

While most students are excited to be involved, at times there may be students (one or two) who are not engaged or do not pull their weight. A one-on-one conversation with such students may help them find something about which they are passionate, or simply a method of research with which they can feel confident. Inquiry-based learning provides the diligent student the opportunity to dig deep into subject matter, while at the same time providing the more reluctant student with multiple opportunities for success.

### Conclusion

While "Live Learning" provides the optimal opportunity for students to learn new content, it is not always possible for teachers and students to leave the classroom and physically travel to new places. Inquiry-based learning allows teachers to plan for student engagement with new content by utilizing the vast body of information currently available online through sources such as EBSCOhost, CultureGrams, and a variety of other resources. (See box at right.) This approach allows students to develop their inquiry skills as they pursue topics of interest, ask questions, and search and find answers. Ultimately, there is increased teacher and student engagement which enriches the learning experience and helps create lifelong learners. ✍️

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*This article has been peer reviewed.*

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### NOTES AND REFERENCES

1. The source of this quote has been debated. For this reason, we are citing it as an ancient proverb.
2. The students' real names are used with permission.
3. Since the inquiry described in this article, Joy Veverka's classroom has utilized inquiry-based learning exclusively. She uses Project-Based Learning (PBL) and STEAM (science, technology, engineering, arts, and math) as learning strategies and methodologies. Resources such as Website Validity (<http://acoachma.tripod.com/>) and Youth Learn: Technology, Media, and Project-based Learning to Inspiring Young Minds (<http://www.youthlearn.org/learning/general-info/our-approach/intro-inquiry-learning/intro-inquiry-learning>) continue to be staples in her classroom.
4. Center for Inspired Teaching, "Inspired Issue Brief: Inquiry-based Teaching": <http://www.inspiredteaching.org/wp-content/uploads/impact-research-briefs-inquiry-based-teaching.pdf>; Christy Witt and Jonathan Ulmer, "The Impact of Inquiry-based Learning on Academic Achievement of Middle School Students": [http://www.academia.edu/724764/The\\_Impact\\_of\\_Inquiry-Based\\_Learning\\_on\\_the\\_Academic\\_Achievement\\_of\\_Middle\\_School\\_Students](http://www.academia.edu/724764/The_Impact_of_Inquiry-Based_Learning_on_the_Academic_Achievement_of_Middle_School_Students).

### Research Tools

#### EBSCOhost

EBSCO, an online database designed for research, offers a broad range of periodical articles, eBooks, biographies, and professional journals: <https://www.ebscohost.com/schools>.

#### CultureGrams

CultureGrams from ProQuest K-12 provides up-to-date information on every state, province, and country in the world: <http://www.culturegrams.com/>

#### Identifying Appropriate Websites to Use in Research

- Is the site professional? Are there any errors?
- Who is the author? Is he or she qualified in the subject? Are his or her credentials listed?
- Is the site current? How recently has it been updated?
- Is the site copyrighted?
- Can you find the same information on other similar sites? Do the links support the information?

Source: <http://acoachma.tripod.com/>.

#### For Additional Information\*

Inquiry-Based Learning: <http://www.inquiry-based.com/teacher-resources.html>.

Neil Stephenson, "Introduction to Inquiry Based Learning": <http://www.edutopia.org/resource/casey-techinquiry-inquiry-based-learning>.

Pins on Inquiry-based Learning: <https://www.pinterest.com/>. (Because pins change often, it is not possible to list a specific pin. However, there are some very useful PowerPoints on this topic.)

Buck Institute for Education, "Why Project Based Learning (PBL)?" <http://bie.org/WNETEducation>.

Concept to Classroom: "What Is Inquiry-based Learning?" <http://www.thirteen.org/edonline/concept2class/inquiry/>.

\*Websites accessed November 9, 2015.